

**IN THE UNITED STATES DISTRICT COURT FOR THE  
DISTRICT OF NEW JERSEY**

JUAN DUARTE, BETSY DUARTE and N.D., ) Infant, by Parents and Natural Guardians JUAN ) DUARTE and BETSY DUARTE, LEROY ) NOBLES and BETTY NOBLES, on Behalf of ) Themselves and all Others Similarly Situated, ) ) <div style="text-align: center;">Plaintiffs,</div> <div style="text-align: center;">vs.</div> ) ) UNITED STATES METALS REFINING ) COMPANY; FREEPORT MINERALS ) CORPORATION; and AMAX REALTY ) DEVELOPMENT, INC., ) ) <div style="text-align: center;">Defendants.</div> ) ) ) )	Civil Action No. 2:17-cv-01624-ES-SCM  Honorable Esther Salas Honorable Steven C. Mannion  <b>Hearing Date: January 6, 2020</b>  <b>Defendants’ Memorandum in Support of Their Motion to Exclude Plaintiffs’ Experts (Combined Motion)</b>
--	---

David R. Kott  
 McCarter & English, LLP  
 Four Gateway Center  
 100 Mulberry Street  
 Newark, NJ 07102  
 Attorneys for Defendants  
*United States Metals Refining Company,  
 Freeport Minerals Corporation, and Amax  
 Realty Development, Inc.*

Robert M. Schick, Esq.  
 George O. Wilkinson, Esq.  
 Lewis C. Sutherland, Esq.  
 Vinson & Elkins LLP  
 1001 Fannin Street, Suite 2500  
 Houston, TX 77002

Kevin A. Gaynor, Esq.  
 Benjamin S. Lippard, Esq.  
 Vinson & Elkins LLP  
 2200 Pennsylvania Avenue NW, Suite 500 West  
 Washington, DC 20037-1701

Mortimer H. Hartwell, Esq.  
Vinson & Elkins LLP  
555 Mission Street, Suite 2000  
San Francisco, CA 94105

## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>II.</b>	<b>FACTUAL BACKGROUND.....</b>	<b>3</b>
<b>III.</b>	<b>LEGAL STANDARD .....</b>	<b>4</b>
<b>IV.</b>	<b>ARGUMENT AND AUTHORITIES.....</b>	<b>5</b>
<b>A.</b>	<b>The Opinions of Plaintiffs’ Expert George Flowers are Unreliable.....</b>	<b>5</b>
1.	Flowers did not conduct a reliable analysis of alternate sources.....	7
2.	Flowers’ smelter source analysis also fails to provide reliable scientific evidence of smelter contributions to the soil metal concentrations. ....	11
<b>B.</b>	<b>The Opinions of Plaintiffs’ Expert Paul Rosenfeld are Unreliable. ....</b>	<b>14</b>
1.	Rosenfeld’s opinions regarding the source of any lead, arsenic, and copper and the distribution of smelter emissions are unreliable.....	14
2.	Rosenfeld is not qualified to opine regarding NJDEP regulations and cleanup standards. ....	18
<b>C.</b>	<b>The Opinions of Plaintiffs’ Expert Joel Blum are Unreliable. ....</b>	<b>19</b>
1.	Blum is not qualified to render the opinions he offers.....	20
2.	Blum’s opinion that the USMR smelter’s footprint extends beyond two miles is not reliable. ....	21
<b>D.</b>	<b>The Opinions of Plaintiffs’ Expert Jeffery Zabel are Unreliable. ....</b>	<b>23</b>
1.	Zabel’s opinion is not informed by any significant case-specific data collection, data analysis, model design or development, or other testable application of the hedonic method to the facts of the case. ....	24
2.	Zabel has not demonstrated that a reliable model can be constructed to demonstrate specific damages on a class-wide basis.....	27
3.	Zabel has not demonstrated that a reliable model can be constructed that takes into account known alternate sources of contamination.....	28
4.	Zabel is not qualified to act as an expert appraising property values. ....	29
<b>E.</b>	<b>The Opinions of Plaintiffs’ Expert Robert Harrison are Unreliable. ....</b>	<b>29</b>
<b>V.</b>	<b>CONCLUSION .....</b>	<b>30</b>

## TABLE OF AUTHORITIES

### Cases

<i>Brown v. Burlington N. Santa Fe Ry. Co.</i> , 765 F.3d 765 (7th Cir. 2014) .....	7
<i>Calhoun v. Yamaha Motor Corp.</i> , 350 F.3d 316, 322 (3d Cir. 2003) .....	20
<i>Comcast Corp. v. Behrend</i> , 569 U.S. 27 (2013).....	28
<i>Cooper v. Meritor, Inc.</i> , No. 16-cv-52, 2019 WL 545187 (N.D. Miss. Feb. 11, 2019).....	7, 11
<i>Cotromano v. United Techs. Corp.</i> , No. 10-80840-CIV, 2018 WL 2047468 (S.D. Fla. May 2, 2018).....	28
<i>Daubert v. Merrell Dow Pharm., Inc.</i> , 509 U.S. 579 (1993).....	4, 5, 30
<i>Fosmire v. Progressive Max Ins. Co.</i> , 277 F.R.D. 625 (W.D. Wash. 2011) .....	27
<i>Gates v. Rohm &amp; Haas Co.</i> , 655 F.3d 255 (3d Cir. 2011) .....	24, 27
<i>General Elec. Co. v. Joiner</i> , 522 U.S. 136 (1997).....	5
<i>Heller v. Shaw Indus., Inc.</i> , 167 F.3d 146 (3d Cir. 1999) .....	4
<i>Henry v. St. Croix Alumina, LLC</i> , No. 99-cv-0036, 2008 WL 2329223 (D.V.I. June 3, 2008).....	27
<i>In re Blood Reagents Antitrust Litig.</i> , 783 F.3d 183 (3d Cir. 2015) .....	5
<i>In re ConAgra Foods, Inc.</i> , 302 F.R.D. 537 (C.D. Cal. 2014).....	26, 27
<i>In re Paoli R.R. Yard PCB Litig.</i> , 35 F.3d 717 (3d Cir. 1994) .....	4, 5
<i>In re Zolof (Sertraline Hydrochloride) Prods. Liab. Litig.</i> , 858 F.3d 787 (3d Cir. 2017) .....	5
<i>Innis Arden Golf Club v. Pitney Bowes, Inc.</i> , 629 F. Supp. 2d 175 (D. Conn. 2009).....	7
<i>Lee-Bolton v. Koppers, Inc.</i> , 319 F.R.D. 346 (N.D. Fla. 2017) .....	passim
<i>Magistrini v. One Hour Martinizing Dry Cleaning</i> , 180 F. Supp. 2d 584 (D.N.J. 2002) .....	5
<i>Meadows v. Anchor Longwall &amp; Rebuild, Inc.</i> , 306 F. App'x 781 (3d Cir. 2009) .....	20

*Michaels v. Avitech, Inc.*,  
202 F.3d 746 (5th Cir. 2000) ..... 7

*Oddi v. Ford Motor Co.*,  
234 F.3d 136 (3d Cir. 2000) ..... 4

*Packgen v. Berry Plastics Corp.*,  
847 F.3d 80 (1st Cir. 2017)..... 7

*Pedroza v. PetsMart, Inc.*,  
No. ED CV 11-298-GHK, 2013 WL 1490667 (C.D. Cal. Jan. 28, 2013)..... 27

*Player v. Motiva Enter. LLC*,  
2006 WL 166452 (D.N.J. Jan. 20, 2006)..... 29

*Player v. Motiva Enter., LLC*,  
240 F. App’x 513 (3d Cir. 2007) ..... 29

*Redd v. DePuy Orthopaedics, Inc.*,  
700 F. App’x 551 (8th Cir. 2017) ..... 7

*Somers v. Apple, Inc.*,  
258 F.R.D. 354 (N.D. Cal. 2009)..... 27

**Rules**

Fed. R. Evid. 702 ..... 3, 5, 10, 30

## INDEX AND EXPLANATION OF EVIDENCE CITATIONS

Note to the Court: All of the evidence cited in this motion was previously filed in connection with Defendants' original *Daubert* motions. Pursuant to the Court's November 18, 2019 order (Doc. 158 ¶2), this previously filed evidence is incorporated by reference and cited herein by ECF docket number as indicated below. PLEASE NOTE THAT PAGE REFERENCES ARE TO THE ECF ASSIGNED PAGE NUMBER (not the original page numbers of the underlying documents).

Docket Number	Description
------------------	-------------

### EXPERT REPORTS

Doc. 143	Expert Report of Joel D. Blum, Ph.D., May 6, 2019: Distribution of Metal Deposition From The Carteret Smelter Based On Published Investigations Of Other Smelters
Doc. 145-1 & Doc. 145-2	Expert Report of William L. Hall, P.E., July 5, 2019
Doc. 146	Expert Report of Dr. Robert Harrison, M.D., M.P.H., May 6, 2019
Doc. 147	Expert Report of Jeffrey E. Zabel, Ph. D., May 6, 2019: Assessment of Potential Property Value Diminution Associated with Soil Contamination, Borough of Carteret, New Jersey
Doc. 147-1	Expert Report of A.J. Gravel, July 3, 2019
Doc. 147-2	Expert Report of Trevor E. Phillips, FRICS, ASA, CRE, July 19, 2019
Doc. 148	Expert Report of George Flowers, Ph. D., June 10, 2019: The USMR Smelter: Impact on Carteret, New Jersey Residential Soils
Doc. 149	Expert Report of Shahrokh Rouhani, Ph. D., P.E., July 1, 2019
Doc. 149-1	Expert Report of Lisa Szegedi, June 28, 2019: Statistical Evaluations related to the United States Refining Company (USMR) Smelter Operations, Carteret, New Jersey
Doc. 150	Expert Report of David A. Sullivan, June 28, 2019
Doc. 150-3	Expert Report of Ranjit J. Machado, P.E., July 29, 2019
Doc. 151	Expert Report of Paul E. Rosenfeld, Ph. D, May 6, 2019: Preliminary Assessment Report for Class

Doc. 152 & Expert Report of Stephen Emsbo-Mattingly, M.S., July 5, 2019  
Doc. 152-1

### **TESTIMONY**

Doc. 136-4 David Sullivan Deposition Transcript Volume 2, July 9, 2019 (excerpts)  
Doc. 136-5 Joel Blum Deposition Transcript, June 4, 2019 (excerpts)  
Doc. 136-6 John Fenn Deposition Transcript, June 4, 2018 (excerpts)  
Doc. 138-6 Anita Singh Deposition Transcript, June 5, 2019 (excerpts)  
Doc. 139-5 George Flowers Deposition Testimony, June 14, 2019 (excerpts)  
Doc. 140-4 Jeffrey E. Zabel Deposition Transcript, June 4, 2019 (excerpts)  
Doc. 141-4 Paul Rosenfeld Deposition Transcript, June 7, 2019 (excerpts)  
Doc. 142-5 David Sullivan Deposition Transcript Volume 2, July 9, 2019 (excerpts)

### **OTHER DOCUMENTS**

Doc. 51 Amended Class Action Complaint and Jury Demand  
Doc. 132 Defendants' Response in Opposition to Plaintiffs' Appeal of Magistrate Mannion's Order Denying Plaintiffs Rebuttal Expert Reports  
Doc. 139-6 Exhibit 553 to Flowers Deposition: "Distributions of Soil Lead in the Nation's Housing Stock," EPA, May 1996  
Doc. 139-9 Rebuttal Expert Report of Wayne C. Isphording and George Flowers, November 30, 2012  
Doc. 145-2 Paul F. Sanders, Ph. D., NJDEP, Ambient Levels of Metals in New Jersey Soils 1, (May 2003) [NEWFIELDS\_CNJ00008751 - NEWFIELDS\_CNJ00008756]

**DEFENDANTS' MEMORANDUM IN SUPPORT OF MOTION TO EXCLUDE THE  
OPINIONS OF PLAINTIFFS' EXPERTS (COMBINED MOTION)**

At the Court's request (Doc. 158), Defendants are resubmitting their *Daubert* motions originally filed on October 25, 2019 as a combined motion. Accordingly, Defendants respectfully file this combined motion, and would show the Court as follows:

**I. INTRODUCTION**

Plaintiffs' motion for class certification is a house of cards built on unreliable expert testimony. The testimony of each of the five experts cited in Plaintiffs' motion for class certification (George Flowers, Paul Rosenfeld, Joel Blum, Jeffery Zabel, and Robert Harrison)<sup>1</sup> is fundamentally flawed when measured against the requirements of Federal Rule of Evidence 702 (FRE 702).

The crux of Flowers', Rosenfeld's, and Blum's opinions is the same: they each allege that lead and arsenic emitted by the former United States Metals Refining Company's (USMR) smelter deposited on properties throughout the proposed class area, and that USMR's historical emissions are the primary source of these metals on Plaintiffs' properties today. They also share disqualifying flaws: each expert failed to perform a rigorous scientific analysis that might have provided something useful—such as robust statistical analysis, assessment of site-specific data, or microscopy—in favor of cruder, less precise tools not amenable to answering the questions posed (at best) or flat *ipse dixit* (at worst). All three claim that sources other than the smelter are negligible, but did no scientific analysis to confirm that claim. And all three made concessions in their depositions that demonstrate the inadequacy and inadmissibility of their opinions. Flowers,

---

<sup>1</sup> Despite providing reports and depositions, Plaintiffs did not rely on the opinions or testimony of David Sullivan or Anita Singh in their motion for class certification and, as a result, those motions are not asserted here. Defendants reserve the right to reassert those motions in the event that Plaintiffs seek to rely on Sullivan's or Singh's opinions or testimony in the future.

for example, did not perform any reliable scientific analysis of the influence of lead-based paint or fill on soil concentrations (despite opining that those sources are negligible relative to the smelter), and Flowers relied on inadequate and imprecise statistical techniques to opine that the smelter is the major source of metals (despite having used more precise source evaluation tools in other cases). A federal district court recently excluded a similar set of opinions from Flowers as unreliable for essentially the same mistakes that Flowers makes here.<sup>2</sup> Rosenfeld failed to conduct any real statistical or scientific analysis of the data available to him in preparing his opinions. Rather, he simply reiterates the flawed conclusions of Flowers and Plaintiffs' air expert David Sullivan, whom Plaintiffs have since abandoned in their motion for class certification. Blum bases his opinions on the claim that four other smelters—with admittedly different operational characteristics, periods of operation, emissions rates, etc.—had detectable impacts at greater distances. Estimation of impacts by inapposite analogy is an inherently unreliable methodology. Moreover, Blum is entirely unqualified to estimate the extent of aerial deposition of metals from a smelter based on process characteristics, as he is neither an air modeler, nor a process engineer, nor a smelter expert. He is a geochemist—a discipline tellingly *absent* from his report.

Finally, Zabel suggests that, in theory, he *could* use a hedonic regression analysis to create a universal average diminution in property value. Yet Zabel's opinion is untethered to the facts. He has not built his hypothetical model and, as a result, it is completely untested (and incapable of being tested). Zabel's speculation about the reliability of his future work cannot be measured against the rigorous requirements applicable to statistical modeling evidence of this type.

For the reasons set forth below, the opinions and testimony of each of Plaintiffs' experts cited in their motion for class certification should be excluded.

---

<sup>2</sup> *Lee-Bolton v. Koppers, Inc.*, 319 F.R.D. 346, 361-62 (N.D. Fla. 2017).

## II. FACTUAL BACKGROUND

This is a putative class action asserting property damage from a copper smelter that USMR operated in Carteret, New Jersey from 1906 to 1986. Plaintiffs allege that air emissions from the smelter landed and remain on their properties causing alleged property damages.

USMR's ongoing off-site investigation under the oversight of the New Jersey Department of Environmental Protection (NJDEP) resulted in the designation of an Area of Concern (AOC) with approximately 300 properties in close proximity to the smelter. *See* Doc. 149-1 at 10. The extensive soil sampling in and beyond the AOC demonstrates that any off-site impacts from the smelter that are distinguishable from background levels or other anthropogenic sources end within the AOC and do not extend to the much larger proposed class area. *See* Doc. 145-1 at 49-52. Plaintiffs' experts opine that the smelter air emissions are the source of lead, arsenic, and copper in residential soils. But there are numerous other contributors to lead, arsenic, and copper in the proposed class area. Those contributions vary from property to property and require an individualized evaluation to determine the property specific origin of the contaminants.

Defendants' experts prepared reports on different aspects of the source of the lead, arsenic, and copper in the proposed class area. *See* Doc. 145-1 (Hall Report with references to work by Gravel, Rouhani, Szegedi, Mattingly, and Stout). Excavations and soil borings demonstrate the extensive use of fill materials that contain lead, arsenic, and copper. Doc. 145-1 at 95-102; Doc. 152 at 33-36; Doc. 149-1 at 14-16. Lead-based paint has been positively identified in numerous samples via microscopy, and the age of housing (a surrogate for lead-based paint impacts) has the strongest correlation with lead soil levels compared to any other metric. Doc. 145-1 at 55-81; Doc. 152 at 42-43; Doc. 152-1 at 4, 6, 8-13, 16, 18. Historic uses of pesticides in the proposed class area also contributed to the presence of lead, arsenic, and copper; so too did other localized sources from automobile emissions, small businesses such as auto repair and printing shops, the use of

treated lumber, and others. Doc. 145-1 at 20-21; 81-84; 103-08; Doc. 145-2 at 2-5; Doc. 147-1 at 10-33. Arsenic-containing coal ash and cinders are ubiquitous in the proposed class area from industrial and residential use of coal as fuel. Doc. 145-1 at 97; 147-1 at 35-38.

Moreover, the ground distribution of metals is inconsistent with metals that originated from an aerial deposition source—Plaintiffs’ proposed dispersion mechanism. Doc. 139-5 at 99:7-100:25; Doc. 145-1 at 38-45. Key characteristics of aerial deposition are (1) that the contaminants are at their highest concentration at the surface because that is where deposition occurs, and (2) concentrations decrease exponentially with distance from the air emissions source. Doc. 145-1 at 38. While there may be some variability from an aerial deposition source, in this case the variability in soil sample results, the lack of a uniform exponential decline, and the depth at which metals are found are all inconsistent with aerial deposition, and accordingly also inconsistent with Plaintiffs’ experts’ opinions. Doc. 150-3 at 44-47; Doc. 145-1 at 38-54.

### III. LEGAL STANDARD

The trial court acts as a “gatekeeper” and is responsible for ensuring that the standards of admissibility are satisfied.<sup>3</sup> Before admitting expert testimony, the court must determine that: (1) the expert is qualified to testify regarding the issue; (2) the expert’s testimony is reliable; and (3) the testimony fits the facts and needs of the case.<sup>4</sup> The proponent of the expert’s testimony bears the burden of establishing the admissibility of that testimony.<sup>5</sup>

“[A]n expert opinion must be based on reliable methodology and must reliably flow from that methodology and the facts at issue.”<sup>6</sup> In other words, the expert must have both employed reliable methods and techniques, and have reliably *applied* those methods and techniques to the

---

<sup>3</sup> *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592, 597 (1993) (citing Fed. R. Evid. 702).

<sup>4</sup> *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 741-45 (3d Cir. 1994) (“*Paoli II*”).

<sup>5</sup> *Oddi v. Ford Motor Co.*, 234 F.3d 136, 144 (3d Cir. 2000) (citing *Daubert*, 509 U.S. at 593 n.10).

<sup>6</sup> *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 152 (3d Cir. 1999).

facts of the case.<sup>7</sup> To determine the reliability of an expert’s testimony, courts examine factors including “whether the expert’s proposed testimony grows naturally and directly out of research the expert has conducted independent of the litigation,” the expert’s “account[ing] for alternative explanations,” the known or potential rate of error, and the qualifications of the expert witness testifying.<sup>8</sup> “Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” *Joiner*, 522 U.S. at 146.

Finally, the same admissibility standards apply at the class certification motions stage as at trial. “Expert testimony that is insufficiently reliable to satisfy the *Daubert* standard cannot ‘prove’ that the Rule 23(a) prerequisites have been met ‘in fact,’ nor can it establish ‘through evidentiary proof’ that Rule 23(b) is satisfied.”<sup>9</sup>

#### IV. ARGUMENT AND AUTHORITIES

##### A. The Opinions of Plaintiffs’ Expert George Flowers are Unreliable.

Plaintiffs’ primary expert on whether the contaminants at issue came from the smelter or some other source is Dr. George Flowers, a geochemist and environmental engineer. Flowers provided similar “source identification” opinions in *Lee-Bolton v. Koppers, Inc.*, 319 F.R.D. 346 (N.D. Fla. 2017), and the court excluded them as unreliable. *Lee-Bolton* is a class certification decision in a case alleging property damages to residential property in the vicinity of a wood treatment plant based on alleged dioxin contamination. *Id.* at 351-52. Similar to this case, Flowers purported to identify a geographic “pattern” of alleged contamination on the class properties due to air emissions from the defendant’s facility. *Id.* at 362. Also similar to this case, Flowers opined

---

<sup>7</sup> See *In re Zolof (Sertraline Hydrochloride) Prods. Liab. Litig.*, 858 F.3d 787 (3d Cir. 2017).

<sup>8</sup> *Magistrini v. One Hour Martinizing Dry Cleaning*, 180 F. Supp. 2d 584, 594-95 (D.N.J. 2002); *Paoli II*, 35 F.3d at 742 n.8; see also *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

<sup>9</sup> *In re Blood Reagents Antitrust Litig.*, 783 F.3d 183, 187 (3d Cir. 2015).

that the defendant's site was the major source of contaminants impacting these homes. The *Lee-Bolton* district court identified two fundamental errors in Flowers' analysis and completely excluded his opinions.

First and most importantly, the *Lee-Bolton* court found that Flowers failed to adequately evaluate alternate sources of dioxin other than defendant's facility. Similar to Flowers' failure to address lead-based paint, non-native fill, agricultural pesticide use, and other lead and arsenic sources here (discussed below), in *Lee-Bolton* Flowers did not adequately consider the impact of alternate sources of dioxin that are common in an urban environment. The court explained:

Practically every expert testified that dioxins are ubiquitous in an urban environment and that in this case, numerous potentially contributing sources exist even within each home, making it important to identify and eliminate other potential sources in order to pinpoint the source of [dioxin]. Dr. Flowers admitted that he saw variability in the data . . . suggesting that other sources could be impacting the data. . . . But he did nothing to exclude potential in-home sources of [dioxin]. . .

*Id.* at 373-74. Second, the *Lee-Bolton* court also concluded that Flowers did not consider data from a more precise test for defendants' emissions (the "EPA GC/MS" method) that was inconsistent with his opinions which relied on a generic analysis (the "CALUX" method). *Id.* at 373. Similar to the Spearman coefficients that Flowers relies on here (discussed below), the flaw in Flowers' analysis in *Lee-Bolton* was that the CALUX method lacked the ability to differentiate between contaminants from the defendant's facility as compared to other alternate sources. There are specific analytical methods that can distinguish smelter particulate air emissions, but Flowers did not take advantage of any of them--relying instead on less precise methods. Flowers has committed the same mistakes here that he made in *Lee-Bolton*.

1. Flowers did not conduct a reliable analysis of alternate sources.

“A necessary ingredient [of opinions on causation] is the exclusion of alternative causes.”<sup>10</sup> Accordingly, “[i]n deciding whether an expert employed a reliable method, the district court [may] consider whether the expert has adequately accounted for obvious alternative explanations.”<sup>11</sup> The failure to assess alternate potential sources of environmental contaminants has been considered fatal to the admissibility of expert testimony in several environmental tort cases.<sup>12</sup>

Flowers recognized the importance of alternate sources, stating in his report “[t]here is no doubt that the Defense will proffer a myriad of alternate sources for soil contamination to minimize the role played by the smelter in creating the problem.” Doc. 148 at 28. Flowers even accepts that “[t]he company is correct that other sources *may* have contributed to soil loadings.” *Id.* But as illustrated below, Flowers did not do any scientific analysis to evaluate whether those obvious alternate sources of contaminants undermine his overarching opinion that “the USMR complex is the major source of soil contamination in the proposed Class Area.” *Id.* at 27. Faced with a similar situation, the district court in *Cooper v. Meritor, Inc.* explained it was the expert’s burden to “***explain why certain obvious alternative explanations do not undermine his conclusion***” as to the source of the contamination. 2019 WL 545187, at \*22 (emphasis added). That was also Flowers’ unmet burden here.

The two obvious examples of Flowers’ failure to adequately address alternate sources of contaminants are (1) lead-based paint, and (2) non-native fill—both of which are ubiquitous in the

---

<sup>10</sup> *Michaels v. Avitech, Inc.*, 202 F.3d 746, 753 (5th Cir. 2000); *see also* Fed. R. Evid. 702 advisory committee’s note to 2000 amendment at ¶4(3).

<sup>11</sup> *Brown v. Burlington N. Santa Fe Ry. Co.*, 765 F.3d 765, 773 (7th Cir. 2014) (quotation marks omitted); *accord Packgen v. Berry Plastics Corp.*, 847 F.3d 80, 87 (1st Cir. 2017); *Redd v. DePuy Orthopaedics, Inc.*, 700 F. App’x 551, 554 (8th Cir. 2017).

<sup>12</sup> *See, e.g., Cooper v. Meritor, Inc.*, No. 16-cv-52, 2019 WL 545187, \*19-22 (N.D. Miss. Feb. 11, 2019); *Lee-Bolton*, 319 F.R.D. at 373-74; *Innis Arden Golf Club v. Pitney Bowes, Inc.*, 629 F. Supp. 2d 175, 189 (D. Conn. 2009).

proposed class area. In his report, Flowers acknowledged that “leaded paint” is a possible “minor (i.e., relative to the smelter) contribution to soil contamination in Carteret.” Doc. 148 at 30. But his characterization of lead-based paint’s influence on soil concentrations is pure *ipse dixit*.

Before this case, Flowers had never done a forensic evaluation to determine whether lead-based paint was responsible for lead in soil. Doc. 139-5 at 64:5-65:13. Flowers testified that he was unaware that soil lead concentrations impacted by lead-based paint are highly correlated to the age of the house with older housing exhibiting significantly higher soil impacts. *Id.* at 151:3-152:14. U.S. EPA has explained that “the strongest statistical predictor of soil lead [from lead-based paint] was found to be the building age” and has publicly reported that homes built before 1940 and 1950 tend to have “significantly greater . . . lead in soil” than those built after 1960—a well-known fact that Flowers completely failed to consider in his analysis. Doc. 139-6 at 11. Flowers agreed that Carteret is a community with over 55% of the housing built prior to 1960. 139-5 at 216:3-24. Yet Flowers did not control or otherwise test the sensitivity of any of his conclusions against confounding from lead-based paint by using housing age as a metric. *Id.* at 152:15-18.

Similarly, Flowers did not evaluate the individual soil samples or properties to test for the potential presence of lead-based paint. *Id.* at 146:3-147:3. He did not use statistical techniques such as ratio tests (*Id.* at 38:24-39:1) or principal component analysis that can be used to look for the statistical signature of lead-based paint. *Id.* at 41:12-42:19. He did not use microscopy to look for leaded paint chips even though he had used microscopy for similar tasks in other cases. *Id.* at 192:24-193:19. He did not even do a simple calculation to determine if the estimated mass of lead in paint for a typical Carteret house has the potential to explain the observed soil concentrations. *Id.* 199:10-202:14. In contrast, Defendants’ experts have used all of these techniques and produced

evidence of the presence of lead-based paint on individual properties.<sup>13</sup> Flowers was aware of the general scope of Defendants' work before he completed his report.<sup>14</sup>

Flowers was shown a study from Appleton, Wisconsin during his deposition where the measured soil concentrations in a community with older housing, but *without a smelter*, resulted in higher median lead concentrations than those measured in Carteret. Doc. 139-5 at 204:8-213:5. Flowers acknowledged the common sense conclusion that the smelter would be "an additive component" to two similar communities with older homes with lead-based paint. *Id.* at 214:9-215:7. Yet as compared to Appleton, Carteret has a *lower median lead concentration* than a community without a smelter. When asked how he knows that the smelter impacts outweigh lead-based paint, he did not point to any scientific analysis, but rather without any quantitative evaluation "guarantee[d] what's coming out of that smelter is a lot more." *Id.* at 202:4-14; 199:21-200:5. Flowers' *ipse dixit* "guarantee" is not scientific evidence.

Similar to lead-based paint, Flowers acknowledges that the use of "historic fill placed in and around Carteret" has the potential to "create localized metal anomalies." Doc. 148 at 30. Indeed, Flowers testified as follows with respect to obvious fill layers visible during excavation of the Duarte property:

Well, I don't think from one property you can make the conclusion that it's on all properties, but, you know, again my conclusion was that air deposition was the dominant mechanism, and ***I did say that fill could be present on some properties. May be contaminated, may not be contaminated . . . .***

Doc. 139-5 at 245:18-24 (emphasis added). Flowers agreed during his deposition that ubiquitous coal combustion residuals have the potential to contain elevated arsenic concentrations sufficient

---

<sup>13</sup> Ratio analysis and principal component analysis were both utilized by Shahrokh Rouhani as illustrated at Figures 3, 4, 5, and 6 of his report. Doc. 149 at 10-13. SEM (scanning electron microscopy) identification of lead-based paint chips is illustrated in Doc. 152 at Figs. 19 and 20.

<sup>14</sup> See Doc. 148 at 28 (citing Kurtz deposition for "[s]ome of the possibilities being considered as alternate sources for heavy metal contamination" by Defendants' experts); *see also* Doc. 132.

to adversely impact the environment. *Id.* at 38:7-19; 238:16-25. Nevertheless, Flowers did not do any research or scientific evaluation regarding the use of fill within Carteret other than looking at generic NJDEP maps. *Id.* at 230:15-231:8. He did not look at the boring logs from the sample data even though he acknowledged that these logs contain information regarding the presence of non-native materials that are typically associated with fill. *Id.* at 231:9-18. He did not consider field notes by Plaintiffs' own consultant that stated there was fill in the sample, and he did not make any physical observations of the actual samples. *Id.* 261:12-264:9. Flowers did not take advantage of an opportunity to observe any of the site excavations, where there was obvious, visible evidence of massive fill layers. *Id.* at 244:21-246:1; *see* Doc. 145-2 at 16, 19 (photographs of fill).

Flowers understood that the highest lead and arsenic concentrations are typically at depths below the surface sample layer including at depths more than a foot below the surface.<sup>15</sup> This circumstance is consistent with fill, but is inconsistent with air deposition of smelter particulates on the surface. Doc. 139-5 at 113:6-16, 116:4-18; Doc. 145-1 at 38. When asked why he believes that the depth profile of the sample results is still consistent with an air deposition pathway from the smelter, Flowers speculated: “[p]eople dig it up, they move it around, they truck it through the neighborhood, they fill in stuff, and like that . . . I don’t know . . . you could have *air deposition and then plow it under as a possibility*.” *Id.* 122:8-123:3 (emphasis added). Yet, Flowers could not point to any evidence or scientific analysis that would support this obvious speculation. *Id.* 123:13-25.

As a general matter, Flowers performed no individual analysis of specific properties to evaluate the source(s) of lead and arsenic. *Id.* at 146:3-147:3. He did not do any site specific

---

<sup>15</sup> *See* Doc. 148 at Figures 14 and 19 showing elevated concentrations for arsenic and lead at depth; *Id.* at 19 (“It can be seen in Fig. 10 that copper enrichment and exceedances occur at all depths sampled as deep as 90 inches measured depth below the ground surface.”).

analysis to evaluate whether “hot spots” and variability in concentrations could be due to local conditions or historical property use unique to the property.<sup>16</sup>

Arsenic, lead, and copper have been used in building products, pesticides, and other commercial and household products for centuries. As a result, these metals are ubiquitous in any older community. Courts considering analogous issues have held that an expert must, at minimum, “explain why certain obvious alternative explanations do not undermine his conclusion.” *Cooper*, 2019 WL 545187, at \*22. Flowers’ failure to do so here makes his opinion unreliable under Rule 702.

2. Flowers’ smelter source analysis also fails to provide reliable scientific evidence of smelter contributions to the soil metal concentrations.

The other fatal shortcoming identified by the court in *Lee-Bolton* was that Flowers used an analytical technique to define the area of impact that was *incapable* of distinguishing Defendants’ impacts from alternate sources. *Lee-Bolton*, 319 F.R.D. at 361-62, 373. The court recognized that other parties had used more sophisticated methodologies that were able to make this distinction, and Flowers’ failure to take advantage of similar techniques was a fundamental flaw in his analysis. *Id.* Flowers has made the same mistake here.

Flowers described the primary physical properties of particulates that would have originated from the smelter in his report (*e.g.*, the expected size of the particles, general chemical

---

<sup>16</sup> For example, Flowers called out a “hot spot” of high concentrations at PPIN 7337 (180 Pershing Ave.) in his report. Doc. 148 at 22. But he did not do any property specific analysis of the site history. Doc. 139-5 at 250:16-22. Review of historical documents shows that PPIN 7337 was formerly used as a print shop. Flowers agreed that copper is a common component of printing ink. *Id.* at 252:15-21. Moreover, Flowers agreed that printing ink and sludges from cleaning the printing presses could have been stored in the location of the shed where the highest copper results occurred. *Id.* at 253:3-15. Finally, Flowers agreed it is at least “within the realm of possibility” that the high copper results on PPIN 7337 came from copper inks and copper cleaning materials. *Id.* at 256:18-25. But he did no site-specific analysis to assess that question one way or another.

composition, and the particle morphology or shape).<sup>17</sup> He has done investigations of airborne particulates from industrial sources at other sites, and used SEM/EDS<sup>18</sup> technology using these same characteristics (size, chemical composition, and morphology) to identify particles originating from a coal-fired power plant. Doc. 139-5 at 37:16-38:15. Relying on the SEM/EDS analysis, Flowers concluded in his report in that coal combustion case:

Because alumino-silicate and ferrous spherules in the environment have been directly linked to coal combustion . . . the [SEM/EDS] cross section demonstrates *conclusively* that coal combustion products are found in plaintiffs' wipe samples . .

Doc. 139-9 at 5. SEM/EDS is the same technology used by Defendants' expert Steve Mattingly to look for smelter particles (which were not there). Doc. 152 at 20. SEM/EDS provides the specificity and reliability that Flowers' analyses here lack. Doc. 152-1 at 14 (SEM/EDS is "capable of identifying [smelter] particles if they are present"). Nevertheless, Flowers did not use this readily available tool and commonly accepted technique to identify particles that have the signature characteristics of particulate emissions from a copper smelter. Flowers' failure to use a source identification technology that he has used in the past, and that can positively identify smelter air emission particulates, is inexplicable and renders his opinion unreliable.

Flowers also fails to explain how the obvious variability in soil concentrations is consistent with smelter air emissions. Flowers acknowledges in his report that there is "considerable variation . . . observed in the [soil] data." Doc. 148 at 20. He also notes "hot spots" unrelated to distance from the smelter. *Id.* at 20-21. When asked why he did not do a statistical trend analysis to illustrate

---

<sup>17</sup> Doc. 148 at 12 ("Most of the particulates (80%) were less than 53  $\mu\text{m}$  ( $1\ \mu\text{m} = 10^{-6}\ \text{m}$ ) in size with most falling between 5 and 50  $\mu\text{m}$  (silt-sized) . . . Compositionally, it contained heavy metals as expected, copper (144,000 ppm), lead (1,114 ppm), and zinc (2,169 ppm) . . . Morphologically, the material formed from condensation of flue gases . . . resembling spherulitic particles.")

<sup>18</sup> SEM/EDS is a forensic chemistry methodology that utilizes a scanning electron microscope combined with energy dispersive x-ray spectroscopy to identify the size, chemical composition, and morphology of very small particles.

the expected exponential trend with distance one would expect from air dispersion, Flowers explained “[t]here’s so much variability in this data, that the fit would be mediocre at best.” Doc. 139-5 at 43:7-15; 156:19-157:15 (statistical analysis would be a “vacuous exercise”). Flowers was unable to quantify the amount of smelter emissions within particular soil sampling results. *Id.* at 258:20-259:22. Rather than scientific analysis, Flowers’ opinion rests on colorful words that the “[s]melter was raining material.” This decidedly non-technical imagery does not suffice to demonstrate a reasonable degree of scientific certainty. In *Lee-Bolton*, “Dr. Flowers admitted that he saw variability in the data . . . suggesting that other sources could be impacting the data.” *Lee-Bolton*, 319 F.R.D. at 373. There, as here, he chose not to evaluate possible explanations for that variability in a reliable scientific way.

Finally, the sole statistical analysis that Flowers uses to justify his opinion that the smelter is the predominate source of metals in Carteret is his Spearman rank correlations. Doc. 148 at 26-27. Spearman rank correlations are a crude statistical measure not suitable to untangling the questions that Flowers seeks to answer with them. The process converts all the concentration data into a “rank” (1, 2, 3, . . . etc.), and then just measures whether the “ranks” for one variable (in this case copper, lead, or arsenic) go up and down at the same time as the other variables. Doc. 149 at 35. This technique is inherently unreliable here because widely divergent data sets can have significant Spearman rank correlations. *Id.* Critically, Spearman ranks cannot identify a unique smelter statistical “signature;” they cannot identify the expected air dispersion patterns with distance from the smelter; and they cannot assess relationships related to the soil concentrations because the nature of the test converts those concentrations to crude integer “ranks.” Doc. 139-5 at 184:13-187:17. Flowers’ Spearman analysis does not provide support for his source identification opinion.

Defendants respectfully request that the Court grant their motion and exclude the report and expert testimony of Dr. George Flowers as inadmissible in this matter.

**B. The Opinions of Plaintiffs' Expert Paul Rosenfeld are Unreliable.**

Plaintiffs' expert, Dr. Paul Rosenfeld is a soil chemist who has offered two primary opinions: first, Rosenfeld opines that air emissions from the USMR smelter were the "primary" source of lead, arsenic, and copper contamination in the proposed Class Area. Doc. 151 at 28. While Rosenfeld purports to base this opinion on "multiple lines of evidence," neither his report nor his deposition testimony provides any reliable scientific or statistical analysis to support it.

Second, Rosenfeld speculates that the State of New Jersey might change its lead cleanup level to 200 parts per million ("ppm") from the current 400 ppm. Doc. 151 at 27-28. Nevertheless, Rosenfeld himself conceded that, as part of its latest revisions to the regulatory standards, the State *reaffirmed* the current standard. Leaving that inconsistency aside, Rosenfeld is not qualified to opine on regulatory cleanup levels. He is not a toxicologist, he has never set a regulatory cleanup level or conducted a risk assessment supporting one, and he has no other qualifications that give him a basis to opine on the appropriate lead cleanup level.

1. Rosenfeld's opinions regarding the source of any lead, arsenic, and copper and the distribution of smelter emissions are unreliable.

Rosenfeld's opinion that USMR was the "primary source" of lead, arsenic, and copper within the proposed Class Area outside of the immediate vicinity of the smelter lacks any credible or verifiable support.<sup>19</sup> Rosenfeld testified that he had "considered" various alternative sources,

---

<sup>19</sup> The experts of both parties agree that there is an exponential decreasing trend of metal concentrations in the immediate vicinity of the smelter that could be due in part to historic air emissions from the smelter (*e.g.*, the approximate 300 properties in the Area-of-Concern ("AOC") that is currently undergoing remediation as part of the NJDEP regulatory action). *See* Doc. 149 at Section 4.3. Nevertheless, even within the AOC, there is evidence of significant alternate sources of metals. *See supra* at 3-4.

but failed to perform *any* quantitative analyses whatsoever to support his opinion.<sup>20</sup> Instead, Rosenfeld suggests that, based on his “general understanding of air modeling and soil chemistry,” the Court should just trust his judgment. Doc. 141-4 at 98:1-5.

Moreover, Rosenfeld repeatedly declined to articulate a scientific foundation for his opinions and either (i) deferred substantive questions on the source of soil metals to Flowers’ unreliable work (*id.* at 48:6-9; 57:17-58:3; 70:22-71:5; 168:17-169:10); or (ii) punted questions on distribution of contamination to Plaintiffs’ erstwhile “air” expert, David Sullivan (whom Plaintiffs have since abandoned). *Id.* at 56:2-22; 110:8-13; 102:1-13; 98:23-99:6. Rosenfeld also admitted that his posited other “lines of evidence” based on old photographs and violations provided no quantitative support for his opinion. *Id.* at 100:4-11; 101:1-15.

Because Rosenfeld relies so heavily on Sullivan, it is necessary to review Sullivan’s report for consistency with Rosenfeld’s opinions (even though Plaintiffs’ did not cite Sullivan in their certification brief). Surprisingly, given Rosenfeld’s testimony, Sullivan’s results do not support Rosenfeld’s opinions. Critically, Rosenfeld testified, “I am . . . relying on Sullivan’s air model to show that the air transport mechanism resulted in the blanketing of . . . Carteret . . . with copper, lead, and arsenic.” Doc. 141-4 at 56:16-19. But Sullivan’s model does not show smelter impacts “blanketing” Carteret. Doc. 150 at 47; Doc. 150-3 at 44-45. Instead, review of Sullivan’s Figures 15-17 show that under every scenario that Sullivan considered, his maximum predicted soil concentration (including both smelter emissions and background) is less than half the lead cleanup level of 400 ppm outside the immediate smelter area (e.g., the AOC). *Id.* at 47-51.

Similarly, an air dispersion mechanism is expected to “show a general exponential decrease

---

<sup>20</sup> Doc. 141-4 at 90:15-92:2 (Rosenfeld did not calculate the amount of smelter materials entering class area); 53:1-11 (Rosenfeld did not develop a smelter “signature” concentration profile); 168:17-169:10 (Rosenfeld thought about but did not complete a “correlation analysis”).

of concentrations as you move[ ] away from the facility.” Doc. 151 at 21. Sullivan agreed that he expected to see a declining trend in concentration moving away from the smelter. Doc. 142-5 at 318:11–319:17. Rosenfeld testified “I didn’t do the trend analyses that . . . Sullivan . . . conducted. But I know that [he has] conducted them, and it shows a decreasing trend with distance.” Doc. 141-4 at 56:19-22.

Indeed, Sullivan tried to create a visual representation of this theory by comparing his predicted lead concentrations to measured lead concentrations in the AOC in Figure 16a of his report. Doc. 150 at 47. Sullivan represents his modeled soil lead concentrations as “iso lines” and measured soil lead concentrations as colored dots. *Id.* at 46. As part of Ranjit Machado’s report, he isolated a portion of Figure 16a from Sullivan’s report to illustrate that soil concentrations do not match the iso lines. Doc. 150-3 at 44-47, 67 (Fig. 6). The colored dots should appear with the colors for the highest concentrations closest to the smelter (bottom-right of figure) and the colors for lesser concentrations following in order. *Id.* Even a cursory review of the figure shows that there is no visually discernable declining trend in color or correlation between the expected air dispersion pattern. *Id.* The colored dots appear randomly with no organization based on distance. Higher lead concentrations (red, orange and dark blue dots) are common far from the smelter in older neighborhoods (likely due to lead based paint) on the east (right) side. *Id.*

Plaintiffs’ statistics expert, Dr. Anita Singh (another Plaintiffs’ expert not cited in their brief), agreed that the data trends outside of the AOC do not show the characteristic exponential decline associated with air emissions. Doc. 138-6 at 137:16-22. Singh was asked “do you have any opinion about whether or not the concentrations of lead continued to decrease with distance” within the transect data (outside the AOC)? Her response was: “You know, I don’t know. There is random fluctuations. Some points are high. Some points are very, very low” and “if you look at it

like that, probably there is no trend.” *Id.* at 147:3-21; 148:2-12. Thus, the “decreasing trend with distance” in the soil data that should exist if the lead originated from smelter emissions--and that Rosenfeld ascribes to Sullivan as the foundation for his opinion in the testimony cited above--simply does not exist.

Further, “[a] necessary ingredient [of opinions on causation] is the exclusion of alternative causes.” *See supra* at 6-7. There is significant evidence of alternative sources of the contaminants in Carteret. *See supra* at 3-4. Even Rosenfeld acknowledges that “additional sources of the [chemicals of concern] may exist in Carteret,” (Doc. 151 at 26) and testified to that effect. Doc. 141-4 at 58:4-61:14. But instead of conducting his own analysis to support his opinions, Rosenfeld just parrots Flowers’ flawed source identification work. *Id.* at 48:6-9; 57:17-58:3; 70:22-71:5; 168:17-169:10. This is insufficient under Rule 702.

The lack of scientific support for Rosenfeld’s opinion, and his decision to merely dismiss the significance of other metals sources in a generalized and qualitative way is striking, particularly in light of the fact that he has worked on projects for the Navy where he identified soils that had to be remediated due to metals impacts from lead-based paint. *Id.* at 27:20–29:2. Moreover, Rosenfeld agreed that there may be homes in the proposed Class Area where the dominant source of lead came from lead-based paint, rather than any alleged aerial emissions from USMR. *Id.* at 66:9–67:2. He similarly agreed that lead is frequently present in non-native fill. *Id.* at 81:17-82:4. The sources of metals vary from property to property and may require an individualized evaluation to determine the property-specific origin of the contaminants. *Id.* 131:24-131:25 (“But I believe additional investigation is needed to adequately evaluate the properties”). Rosenfeld’s decision not to analyze potential sources of metals that he knows to exist in Carteret, and which he himself has

analyzed in soils at other sites, speaks volumes about what he expected to find if he actually performed such analyses.

Rosenfeld's reliance on the unreliable and/or contradictory work of Flowers and Sullivan plus his failure to do any independent reliable work himself renders his testimony unreliable.

2. Rosenfeld is not qualified to opine regarding NJDEP regulations and cleanup standards.

Rosenfeld opines that the current 400 ppm cleanup standard for lead is not appropriate because "regulatory agencies are moving toward more protective cleanup standards for remediation of lead in residential soil." Doc. 151 at 20. He theorizes that 200 ppm will be the future number. Doc. 141-4 at 127:7–127:9; 127:17–127:23. But Rosenfeld is not an expert in the divination of future regulatory behavior by government agencies, whether or not the tea leaves suggest, as he put it in his report, that "there are indications" that cleanup standards for lead might become lower at some point in the future. Doc. 151 at 27. His guesses about the future path of environmental regulation are mere speculation—speculation that his own concessions undermine.

Rosenfeld conceded that establishing cleanup standards is "typically the regulator's job." Doc. 141-4 at 32:16–33:5. Rosenfeld testified that he himself had "*never* done one of those risk assessments where a regulatory agency has approved the level that [he] came up with as part of that risk assessment"—the result he argues for here. *Id.* at 35:20–37:10 (emphasis added). Rosenfeld is not a toxicologist. *Id.* at 37:19-21. He further acknowledged that he is neither a regulator nor an expert in New Jersey environmental regulations (*Id.* at 38:4-11), and candidly acknowledged that NJDEP "has not adopted [the lower standard] for the entire state in their remediation guidance." *Id.* at 161:21-23. Rosenfeld is a soil scientist with no qualifications to render an opinion on the appropriate lead cleanup level in New Jersey.

Other than Rosenfeld's unqualified speculation, there is little else to support his opinions. Rosenfeld observes that at a single Superfund site in New Jersey, the State concurred with a 200 ppm lead cleanup standard two years ago. But Rosenfeld acknowledged during his deposition that the State later updated and reissued its residential soil cleanup levels after the Superfund site report he cites, and *did not change* the lead cleanup level. *Id.* at 140:25-141:15. Rosenfeld agreed that both NJDEP and the U.S. EPA continue to endorse the 400 ppm cleanup level that is used by USMR in the AOC in Carteret. *Id.* at 141:12-144:1. Rosenfeld erroneously claimed that the LSRP in this matter, Mr. McNally, suggested that the "lower cleanup level [proposed by Rosenfeld] was appropriate," a point Rosenfeld conceded was entirely unsupported by any testimony or report provided by Mr. McNally. *See id.* at 156:25–158:1. McNally suggested no such thing. Rosenfeld's opinions on the clean-up levels are unreliable.

Defendants respectfully request that the Court grant their motion and exclude the report and expert testimony of Dr. Paul Rosenfeld as inadmissible in this matter.

**C. The Opinions of Plaintiffs' Expert Joel Blum are Unreliable.**

Blum's opinion boils down to the proposition that because four other smelters deposited metals in a "footprint" that extended beyond 2 miles, the USMR smelter must have resulted in the same sort of footprint in Carteret. Doc. 143 at 4. Why? Two reasons: (1) the USMR smelter is "similar" to one of these other smelters (with the term "similar" used colloquially and without any scientific or methodological rigor) and so must obviously have had a similar footprint, and (2) there are three other smelters—admittedly "having significant differences" from the USMR smelter—where metals are "transported in the atmosphere by processes similar to those that operated at Carteret," which also had similar footprints. *Id.* These opinions are inadmissible in their entirety. As a threshold matter, Blum is unqualified to render these opinions. By his own admission, he is not a smelter expert, and thus he is not qualified to opine on whether smelters are

similar or not (as explained below, they are not). And by his own admission, he is not an expert on processes of atmospheric transport, despite claiming that the processes in Carteret are similar to those at other smelters (again, they are not).

Even if Blum were qualified, his opinions are unreliable because they ignore crucial differences among the smelters at issue, and because there is no precedent or basis for this “smelter stack heights define footprint” “methodology.” Blum himself admits that other factors he ignored—including a smelter’s production level, characteristics of smelter feed, particle size of emissions, rate of processing, emission controls, stack height, meteorological and atmospheric conditions, and geographic features of a location—impact smelter deposition footprints. Doc. 136-5 at 25:2–26:17; 27:2–28:3; 99:23–101:7; *see also*, Doc. 150-3 at 28–29 (discussing factors affecting atmospheric dispersion and soil deposition); 48–49.

1. Blum is not qualified to render the opinions he offers.

“[T]o qualify as an expert . . . a witness must possess sufficient qualifications in the form of knowledge, skills and training.”<sup>21</sup> If an expert seeks to testify outside his area of expertise, his testimony will be inadmissible. *Id.*

Blum is a Ph.D. geochemist. Doc. 136-5 at 19:18-24; Doc. 143 at 3. All of his research articles relate to geochemistry and geomorphology. Doc. 136-5 at 19:25–20:19. Blum has no publications or prior work determining the footprint of air emissions from a stack—smelter or otherwise. Blum has substantial experience and training in geochemistry and has done limited geochemistry projects related to soils potentially impacted by emissions from a smelter. Doc. 143 at 3. But Blum did not apply that expertise here: he did not study soils in Carteret or at any of the

---

<sup>21</sup> *Meadows v. Anchor Longwall & Rebuild, Inc.*, 306 F. App’x 781, 788 (3d Cir. 2009); *see also Calhoun v. Yamaha Motor Corp.*, 350 F.3d 316, 322 (3d Cir. 2003).

smelter sites he compares to Carteret (Doc. 136-5 at 34:21–35:15), and he did not address the movement of metals through soil or other topics related to geochemistry. *Id.* at 44:4-19.

Instead, Blum offered expert opinions on aerial deposition patterns from smelters. Blum’s expertise in geochemistry does not qualify him as an expert in smelter processes or in determining aerial deposition patterns from smelters. Blum admitted as much during his deposition. *Id.* at 21:9-16; 27:11-18; 27:24–28:3. Thus, his opinions regarding smelter footprints should be excluded because they are not within his area of expertise.

2. Blum’s opinion that the USMR smelter’s footprint extends beyond two miles is not reliable.

Blum opines that soil impacts from the USMR smelter in the proposed class area can be determined by comparing USMR to the footprints of four other smelters based only on stack height. Blum’s purported method of comparison is unreliable and not supported by any of the smelter studies he cites. Blum ignored numerous factors that he admits would impact a smelter’s deposition footprint and failed to consider profound differences in operations and dispersion conditions of the smelters. The factors include a smelter’s production level, characteristics of smelter feed, particle size of emissions, rate of processing, emission controls, stack height, meteorological and atmospheric conditions, and geographic features of a location, but the only factor he considered was stack height. Doc. 136-5 at 25:2–26:17; 27:2–28:3; 29:21-30; 38:6-19; 199:23–101:7. Blum freely admits that, although he knows those other factors affect deposition footprints, he does not have expertise on *how* those factors impact deposition footprints. *Id.* at 25:23–26:3; 27:24–28:3. Indeed, even Plaintiffs’ own air modeling expert, acknowledges that USMR’s 400-foot stack was *not* a significant source of metal in the proposed class area. Doc. 136-4 at 310:4–311:8; Doc. 150-3 at 57.

Blum admits that three of his comparison smelters have “significant differences” with the

USMR smelter, but his report does not define what those differences are, explain why the three smelters are valid points of comparison despite these “significant differences,” or explain how he adjusts the comparisons for those significant differences. Doc. 143-0 at 4-5; Doc. 150-3 at 55-56. Blum’s primary point of comparison, the Horne smelter, is inapposite because he did not consider material differences between the smelters. Doc. 136-5 at 48:22 – 54:15. The differences between Blum’s comparison smelters and the USMR smelter are described by Defendants’ expert Ranjit Machado in his report. Doc. 150-3 at 54 – 59.

Blum’s opinions are premised on the assumption that the USMR smelter operated with a 425-foot stack for primary smelting for the entire operating life of the smelter (making it “similar” to the other smelters). Blum has two major errors in his assumptions: (1) how long USMR operated with a 400-foot stack (Blum was wrong when he said the USMR stack was 425 feet tall. Doc. 136-6 at 104:5-24; Doc. 150-3 at 20, 22); and (2) the change in smelting operations at USMR.

USMR operated as a primary smelter with the 400-foot stack for *only 12 years*, from 1948 to 1960, and before that operated with stacks *less than half as tall*. Doc. 136-6 at 104:5–24; Doc. 150-3 at 20, 21. Blum did not know when USMR’s 400-foot stack was built or when USMR operated with considerably shorter stacks. Doc. 136-5 at 52:5-24. On these facts alone, the USMR smelter is vastly different from the smelters considered in Blum’s report, where the stacks were used for primary smelting for between 50 and 100 years longer<sup>22</sup>—yet more key facts that Blum acknowledged he did not know.<sup>23</sup>

---

<sup>22</sup> Horne opened in 1927 and is still operating 92 years later (Doc. 136-5 at 48:22–49:7); Trail opened in 1896 and is still operating 123 years later (*Id.* at 97:1-11); Tacoma smelter operated for 69 years with its 571-foot stack (*Id.* at 76:9–14).

<sup>23</sup> Blum does not know how long: Horne Smelter operated with its 443-foot stack (*Id.* at 49:22–50:1); Trail operated as a copper smelter (*Id.* at 100:13–19); Trail operated with its 409-foot stack (*Id.* at 103:1–3); or Tacoma operated with its 564-foot stack (*Id.* at 76:9–14).

Additionally, in 1960 USMR made a major process change and shifted from primary smelting, where the feed is ore or ore concentrates, to exclusively secondary smelting where the feed is metals for recycling. Doc. 150-3 at 22. Blum knew that USMR shifted from primary smelting to secondary smelting but does not know when. Doc. 136-5 at 121:5–122:5. Blum also knew that secondary smelting would not have the same level of impurities—including lead and arsenic—as primary smelting but he did not consider those factors. *Id.* at 122:6-18.

Blum does not even know how stack height affects the dispersion pattern and is unable to articulate the impact that stack height has on atmospheric dispersion and smelter footprints. Doc. 136-5 at 27:11-23; 110:10-17. “[E]xperts often extrapolate from existing data,” but courts cannot admit into evidence opinions that are “connected to existing data only by the *ipse dixit* of the expert.” *Joiner*, 522 U.S. at 146. Blum cannot explain how the existing data on stack height relates to his opinions on dispersion; thus, his opinions based on stack height are nothing more than *ipse dixit* which is unreliable, inadmissible testimony. *Id.*

Defendants respectfully request that the Court grant their motion and exclude the report and expert testimony of Dr. Joel Blum as inadmissible in this matter.

**D. The Opinions of Plaintiffs’ Expert Jeffery Zabel are Unreliable.**

Plaintiffs seek to certify a class of residential property owners within the proposed class area, which encompasses portions of the Borough of Carteret and portions of Port Reading in New Jersey. Doc. 51 at ¶53. Plaintiffs’ contention that they can prove damages on a class-wide basis rests on the purported expert report of economist Dr. Jeffrey E. Zabel, which offers just one hypothetical opinion: Zabel suggests that, in theory, he *could* use an hedonic regression analysis to create a universal average diminution in property value that the Court might apply to all properties in the proposed class. Doc. 147 at 10.

Yet Zabel’s opinion, untethered to facts and completely untested (and incapable of being tested), suffers from a number of fatal flaws. First, he has done essentially no case-specific work or put forth a model (or partial model) that any party could test for reliability. Second, by using a methodology that is only capable of modeling average diminution of property value regardless of a multitude of individual factors, Zabel’s model does not meet the Third Circuit’s requirement that damages must be proven for each individual class member based on their factual circumstances.<sup>24</sup> Third, Zabel’s proposed methodology lacks any meaningful way to isolate damages resulting from Plaintiffs’ proposed theory of class-wide liability (contamination allegedly caused by Defendants), as opposed to the numerous alternative sources of contamination. Finally, Zabel is not qualified to opine on property value diminution. He is not a real estate appraiser and did not (and does not plan to) employ the standards of the appraisal profession or to consult with a local appraiser.

1. Zabel’s opinion is not informed by any significant case-specific data collection, data analysis, model design or development, or other testable application of the hedonic method to the facts of the case.

Plaintiffs retained Zabel, an economist, “to provide an opinion regarding the potential for environmental contamination in portions of Carteret and Port Reading, New Jersey, to negatively impact residential property values, and the existence and applicability of methods to assess such impacts on a class-wide basis.” Doc. 147 at 3. Zabel does not, however, “provide analysis of, or an opinion related to, the impact, if any, on the market value of properties in the area defined as the property damage class area and surrounding parts of Carteret and Port Reading, New Jersey.” *Id.* Rather, Zabel’s report merely hypothesizes that an hedonic property value method, or regression analysis, *could* be used to develop “a statistical model of the impacts of the soil

---

<sup>24</sup> See *Gates v. Rohm & Haas Co.*, 655 F.3d 255 (3d Cir. 2011).

contamination to the class as a whole that can be applied individually to all affected properties (typically on a percentage basis).” *Id.* at 8.

Zabel outlines a series of generalized, hypothetical steps to the hedonic approach without reference or analysis to the realities of the proposed class area. *See id.* at 3-8. He then summarily concludes that these steps could be applied to Carteret and Port Reading. *Id.* at 8. He reaches this conclusion despite having done essentially no case-specific analysis or factual development to verify whether his generic hedonic method opinion actually fits the facts of this case:

- Zabel has not yet constructed his hedonic model. Doc. 140-4 at 56:23–57:1; 101:15-24;
- Zabel has not developed the residential data necessary to run his model. *Id.* at 107:22-25; 108:1–109:1;
- Zabel has not done any quantitative appraisal or valuation analysis for the Duartes or for anyone else in the proposed class. *Id.* at 36:4–37:7; 38:15-18;
- Zabel does not know the location or fraction of the proposed class area where people received cleanup notice letters or participate in the regulatory program. *Id.* at 118:1–119:3;
- Zabel has no personal familiarity with the relevant communities and neighborhoods, and has done next to nothing to improve his knowledge of the local real estate market. *Id.* at 38:23–39:12; 40:7-8, 40:15–41:20; 68:6-9. 51:20-52:10; 67:17–68:9; 82:16-18; 83:1; 110:4-25;
- Zabel has proposed no way for his hypothetical model to account for properties’ varying characteristics, such as state of upkeep, any damage to a house, or recent remodeling. *Id.* at 136:21–138:19;
- Zabel does not have any specific facts or information about the alleged contamination in Carteret or how it might affect the local housing market. *Id.* at 99:4-11;

- Zabel assumes that each property in the proposed class area suffered a compensable injury. *Id.* at 42:10–20; 84:25–86:11. But many properties have not been tested at all. And not all of the properties that have been tested show abnormal levels of the alleged contaminants.

In sum, Zabel has not performed any significant case-specific data collection or analysis, model design or development, or any other testable application or analysis of his hypothetical hedonic model to the specific facts of this case.

Federal courts require case-specific model development and proof of reliability in the class certification context for statistical analyses like Plaintiffs’ proposed mass appraisal and regression analyses, and these courts have routinely rejected vague and generic proposals.<sup>25</sup> In *ConAgra*, plaintiffs argued that their expert’s report at the class certification stage satisfied evidentiary standards “by offering a basic description of the manner in which hedonic regression and conjoint analysis operate,” and they “assert[ed] that the exact specifications [the expert] will use will be solidified as discovery progresses.” *Id.* at 552. The court rejected these arguments, finding:

[The expert] does not provide a damages model that lacks certain variables or functionality. Rather, he provides no damages model at all. Although the methodologies he describes may very well be capable of calculating damages in this action, [the expert] has made no showing that this is the case. He does not identify any variables he intends to build into the models, nor does he identify any data presently in his possession to which the models can be applied. The court is thus left with only [the expert’s] assurance that he can build a model to calculate damages. Stated differently, his declaration is “so incomplete as to be inadmissible as irrelevant.”

*Id.* (internal citation omitted). *ConAgra*’s description of the lack of case-specific model development and analysis perfectly describes Zabel’s report and lack of case-specific work here. Other district courts have reached similar conclusions rejecting an assurance of reliability in the class certification context where the expert has not completed sufficient case-specific fact

---

<sup>25</sup> See, e.g., *In re ConAgra Foods, Inc.*, 302 F.R.D. 537 (C.D. Cal. 2014).

development, analysis, and application.<sup>26</sup>

Like in *ConAgra* and the cases in note 26, Zabel “provides no damages model at all,” and has made no showing that the hedonic approach is capable of calculating damages here. *ConAgra*, 302 F.R.D. at 552. As described above, Zabel’s report is not tied to even the bare minimum of case-specific data collection, model development, or real property valuation analysis. Without even some demonstration of a model, Zabel’s opinion is so incomplete as to be inadmissible and irrelevant.

2. Zabel has not demonstrated that a reliable model can be constructed to demonstrate specific damages on a class-wide basis.

Plaintiffs must demonstrate that there is admissible, class-wide evidence of property damage. Yet the characteristics and conditions of the properties within the proposed class area are diverse: there are distinct neighborhoods and types of properties (Doc. 147-2 at ¶27); most properties have not been tested for contamination (*Id.* ¶57); and not all properties that were tested meet remediation requirements. *Id.* ¶58. In situations like this, the Third Circuit has made clear that plaintiffs must have individualized proof of damages rather than relying on an expert’s stated generalities. *See Gates*, 655 F.3d 255. “Averages or community-wide estimations would not be probative of any individual’s claim because any one class member[’s property] may have an exposure level well above or below the average.” *Id.* at 266. Further, “[n]ot all claims of property damage based on exposure are alike. Single instances or simple theories of contamination may be more apt for consolidated proceedings than extensive periods of contamination with multiple sources and various pathways.” *Id.* at 271.

---

<sup>26</sup> *See, e.g., Henry v. St. Croix Alumina, LLC*, No. 99-cv-0036, 2008 WL 2329223, at \*7 (D.V.I. June 3, 2008); *Pedroza v. PetsMart, Inc.*, No. ED CV 11-298-GHK, 2013 WL 1490667, at \*3 (C.D. Cal. Jan. 28, 2013); *Fosmire v. Progressive Max Ins. Co.*, 277 F.R.D. 625, 630-31 (W.D. Wash. 2011); *Somers v. Apple, Inc.*, 258 F.R.D. 354, 361 (N.D. Cal. 2009).

As in *Gates*, Zabel has disclaimed that his proposed model would be “conclusive as to individual cases.” *Id.* at 261. During his deposition, Zabel acknowledged that the hedonic model does *not* make a determination about any specific property’s value or individualized damages with respect to environmental contamination. Doc. 140-4 at 168:1-8. Rather, for his hypothetical model, Zabel asserts without any significant case-specific work that the area near the smelter is “homogenous,”<sup>27</sup> and that he does not need to know how many properties have been tested for contamination, the individual properties’ test results, the type of contamination, or whether specific properties needed excavation and removal. *Id.* at 55:10-13; 55:21–56:2. This is because, as Zabel explained, “hedonic models are used to give information on general market outcomes, not specific houses.” *Id.* at 84:25–85:11. But, the Third Circuit requires proof of damages as to “specific houses,” and Zabel’s proposed methodology cannot meet that requirement.<sup>28</sup>

3. Zabel has not demonstrated that a reliable model can be constructed that takes into account known alternate sources of contamination.

The U.S. Supreme Court has held that a class-wide damages model must be able to isolate damages resulting from the plaintiffs’ proposed theory of class-wide liability.<sup>29</sup> But Zabel has made no effort to demonstrate how his hypothetical model will isolate damages allegedly caused by Defendants from a multitude of alternative sources of contamination. Nor could he. Zabel has stated that he has “not received any specific information on the levels of contamination in any of the properties in Carteret” (140-4 at 136:18-20); and was not aware of any potential alternative

---

<sup>27</sup> See *id.* at 38:23–39:12; 40:7-8, 40:15–41:20; 68:6-9.

<sup>28</sup> See *Cotromano v. United Techs. Corp.*, No. 10-80840-CIV, 2018 WL 2047468, at \*19 (S.D. Fla. May 2, 2018) (finding “mass appraisal” method was unreliable and did not “fit under the facts” of the case in part because “[t]he affected community is not remarkably homogeneous . . . , but rather includes a wide variety and scale of homes . . . of various ages, sizes and conditions—diverse properties which are not logically impacted in the same way by the alleged environmental stigma”).

<sup>29</sup> *Comcast Corp. v. Behrend*, 569 U.S. 27, 35-38 (2013).

sources of contamination.<sup>30</sup> Zabel speculated he could address alternate sources. *Id.* at 132:2–136:20. But there is no model for anyone to test, and Zabel is just speculating about future performance of an as-yet unbuilt model. “[S]uch guess work is not a reliable method.”<sup>31</sup>

4. Zabel is not qualified to act as an expert appraising property values.

An expert must possess sufficient qualifications in the form of knowledge, skills and training. *Supra* at FN 21. A federal court found a proposed expert lacked requisite qualifications to testify to the diminution in property value due to contamination even where he had worked as a licensed appraiser for 22 years but never appraised contaminated property.<sup>32</sup> Zabel is not even a qualified or licensed real estate appraiser, nor does his report reference industry standards like the *Uniform Standards of Professional Appraisal Practice*. Doc. 140-4 at 80:3-5. Zabel testified that he has not even reviewed the relevant real estate appraisal standards for measuring the effects of environmental contamination. *Id.* at 80:11–81:7. Further, Zabel did not and has no plans to consult with a local real estate expert or appraiser. *Id.* at 23:24–24:10, 80:11-22. In sum, Zabel lacks the requisite knowledge or expertise in issue an opinion on real property appraisal.

Defendants respectfully request that the Court grant their motion and exclude the report and expert testimony of Dr. Jeffery Zabel as inadmissible in this matter.

#### **E. The Opinions of Plaintiffs’ Expert Robert Harrison are Unreliable.**

Plaintiffs have designated Harrison as an expert whose sole relevant opinion is that:

[t]he presence of arsenic and lead in residential soils at the concentrations detected across the proposed Class Area is of significant health and environmental concern. *It would be reasonable for residents in the proposed Class Area to be concerned about the presence of these contaminants in their living environment.”*

---

<sup>30</sup>*Id.* at 282:14-19.

<sup>31</sup> *Player v. Motiva Enter., LLC*, 240 F. App’x 513, 520 (3d Cir. 2007).

<sup>32</sup> *See Player v. Motiva Enter. LLC*, 2006 WL 166452, at \*6 (D.N.J. Jan. 20, 2006), *aff’d*, 240 F.App’x. 513 (3d Cir. 2007).

Doc. 146 at 6 (emphasis added). Harrison’s opinion, however, provides no reliable evidence of anything. Rather, it amounts to little more than a bald assertion that Plaintiffs’ “concerns” about lead and arsenic are “reasonable,” without expressly considering any of the actual information to which a scientific methodology could properly be applied.

Harrison’s report claims that he reviewed studies and data using (entirely unspecified) “scientific factors” and “best professional judgment” to determine whether lead and arsenic fall into a “class of chemicals” that can cause disease. *Id.* at 5. But on the crucial issue germane to class certification—whether lead and arsenic are present throughout the proposed class area (or indeed *anywhere* specific in the class area) at levels that could cause injury—Harrison’s opinion is unadorned *ipse dixit*. He says nothing about the concentrations of lead and arsenic actually present anywhere in the class area (which vary wildly from property to property), nothing about what specific concentrations of lead and arsenic could actually cause “reasonable concern” in Carteret, and nothing about what particular scientific principles tie one to the other. Because Harrison’s analysis was devoid of any systematic or reliable methodology, it fails to satisfy the requirements of *Daubert* and Rule 702.

Defendants respectfully request that the Court grant their motion and exclude the report and expert testimony of Dr. Robert Harrison as inadmissible in this matter.

## V. CONCLUSION

For the reasons set forth, Defendants request that testimony and opinions of George Flowers, Paul Rosenfeld, Joel Blum, Jeffery Zabel, and Robert Harrison be excluded.

Dated: November 25, 2019

Respectfully submitted

By: /s/ David R. Kott

David R. Kott

McCarter & English, LLP

Attorneys for Defendants

Business Address:

Four Gateway Center  
100 Mulberry Street  
Newark, NJ 07102

Robert M. Schick, Esq.  
George O. Wilkinson, Esq.  
Lewis C. Sutherland, Esq.  
Vinson & Elkins LLP  
1001 Fannin Street, Suite 2500  
Houston, TX 77002

Kevin A. Gaynor, Esq.  
Benjamin S. Lippard, Esq.  
Vinson & Elkins LLP  
2200 Pennsylvania Avenue NW, Suite 500 West  
Washington, DC 20037-1701

Mortimer H. Hartwell, Esq.  
Vinson & Elkins LLP  
555 Mission Street, Suite 2000  
San Francisco, CA 94105